WHAT IS CLAIMED IS:

1. A solid electrolytic capacitor comprising a lead wire; an anode member formed by a sintered member of a valve-action metal powder and embedding therein the lead wire; a dielectric layer formed on a surface of the anode member; a first electrolyte layer formed on the dielectric layer; a cathode member formed on the first electrolyte layer; a silver paste layer formed on the cathode member; external terminals respectively connected to the lead wire and the silver paste layer; and a resin package molded so as to expose the external terminals, in which the first electrolyte layer includes particles constituting the cathode member,

said solid electrolytic capacitor further comprising non-conductive particles between the dielectric layer and the cathode member except the first electrolyte layer, and a second electrolyte layer formed between the dielectric layer and the cathode member, wherein the second electrolyte layer is formed so as to contain the non-conductive particles.

2. A solid electrolytic capacitor according to claim 1, wherein: said second electrolyte layer is formed after said non-conductive particles are positioned in an area constituting a recess on said dielectric layer.

3. A solid electrolytic capacitor according to claim 1, wherein said second electrolyte layer is formed after said non-conductive particles are positioned in such a continuous manner that a distance from an interface between said first electrolyte layer and said dielectric layer to a surface of said anode member is smaller than an averaged thickness of said first electrolyte layer.

4. A solid electrolytic capacitor according to claim 2 or 3, wherein said non-conductive particles are positioned on the surface of said dielectric layer and in said first electrolyte layer, said second electrolyte layer being formed,

whereby said cathode member and said non-conductive particles are not in a direct contact.

5. A solid electrolytic capacitor according to any of claims 1 to 4, wherein said non-conductive particles have an averaged size smaller than an averaged size of particles constituting said cathode member.

6. A solid electrolytic capacitor according to any of claims 1 to 5, wherein said valve action metal is any one of Nb, Al, Ta, Ti, Hf and Zr.

7. A solid electrolytic capacitor according to any of claims 1 to 6, wherein said first electrolyte layer includes at least one of conductive polymers formed by polymerizing at least one of pyrrole, thiophene and derivatives thereof.

8. A solid electrolytic capacitor according to claim 7, wherein said first electrolyte layer includes a conductive powder constituted by at least one of SnO_2 powder and ZnO powder, or a carbon-based conductive filler constituted by at least one of carbon black, graphite and carbon fibers.

9. A solid electrolytic capacitor according to claim 8, wherein said conductive powder is covered by at least either of TiO_2 and $BaSo_4$.

10. A solid electrolytic capacitor according to claim 7, wherein said first electrolyte layer includes a carbon-based conductive filler constituted by at least one of carbon black, graphite and carbon fibers.

11. A solid electrolytic capacitor according to any of claims 1 to 10, wherein said second electrolyte layer is formed by presence of a conductive polymer including non-conductive particles, between a surface of said dielectric layer or said cathode member and graphite particles.

12. A solid electrolytic capacitor according to any of claims 1 to 11, wherein said cathode member is formed by graphite.

13. A method of producing a solid electrolytic capacitor, comprising the steps of:

sintering a valve-action metal powder while embedding a lead wire therein to form an anode member;

forming a dielectric layer on a surface of said anode member;

forming a first electrolyte layer on said dielectric layer of said anode member;

immersing said anode member having the first electrolyte layer in a colloid solution in which non-conductive colloid particles are dispersed, followed by drying;

forming a second electrolyte layer; and

forming a cathode member so as to sandwich said first electrolyte layer and said second electrolyte layer with said dielectric layer, then forming a silver paste layer on said cathode member, then connecting external terminals respectively with said lead wire and said silver paste layer and applying a resin mold so as to expose said external terminals.

14. The method according to claim 13, wherein said immersion step causes the non-conductive particles to be present between said dielectric layer and said first electrolyte layer.

15. The method according to claim 13, wherein said immersion step causes the non-conductive particles to be present in an area constituting a recess on the surface of said dielectric layer.

16. The method according to claim 13, wherein said immersion step is carried out under a reduced pressure, and causes the non-conductive particles to be present in an area on the surface of said dielectric layer where a distance from an interface between said first electrolyte layer and said dielectric layer to the surface of said anode member is smaller than an averaged thickness of said dielectric layer.

17. The method according to claim 13, wherein said non-conductive particles have an averaged size smaller than an averaged size of particles

constituting said cathode member.

18. The method according to claim 13, wherein in at least one of the steps of forming said first and said second electrolyte layers, at least one of conductive polymers, use is made of at least one of conductive polymers polymerized from at least one of pyrrole, thiophene, and derivatives thereof.